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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ADAMS, GREGORY W

ART UNIT PAPER NUMBER

3652

DATE MAILED: 09/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/665,693	Applicant(s) AGGARWAL ET AL.	
	Examiner Gregory W. Adams	Art Unit 3652	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 July 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9 are rejected under 35 U.S.C. 102(e) as being anticipated by Matsunaga et al. (2003/0053893).

With respect to claim 1, Matsunaga et al. disclose a first substrate handling chamber 12, front docking port 50, robot arm 10, rear substrate handling chamber 41, buffer station 101 having a rack (Para. [0065]) configured to support a plurality of 300mm silicon wafers.

With respect to claim 2, Matsunaga et al. disclose a rack 106 configured to support a plurality of 300mm silicon wafers. Further, Applicant is respectfully reminded that claim language consisting of functional language and/or intended use phrasing is given little, if any, patentable weight as the apparatus must merely be capable of functioning, or being used, as claimed. See MPEP 2112.02, 2114. Here, Matsunaga's rack is certainly capable of supporting 300mm wafers, either one at a time or at the same time.

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With respect to claim 3, Matsunaga et al. disclose a rear substrate handling chamber 41.

With respect to claim 4, Matsunaga et al. disclose a buffer station 101 configured to create an inert environment. Further, Applicant is respectfully reminded that claim language consisting of functional language and/or intended use phrasing is given little, if any, patentable weight as the apparatus must merely be capable of functioning, or being used, as claimed. See MPEP 2112.02, 2114. Here, Matsunaga's station 101 has walls confining the interior from an environment exterior to said walls.

With respect to claim 5, Matsunaga et al. disclose a station 101 that can be selectively purged. Paras. [0064-0066].

With respect to claim 6, Matsunaga et al. disclose a z-motion capable robot arm 11. Fig. 2.

With respect to claim 7, Matsunaga et al. disclose a buffer station configured to have an internal volume less than or equal to about 18.3 liters.

With respect to claim 8, Matsunaga et al. disclose a buffer station rack configured to support twenty-five 300mm silicon wafers.

With respect to claim 9, Matsunaga et al. disclose a loadlock chamber configured to have an internal volume less than or equal to about 9.156 liters.

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 14 & 19-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Yonemitsu et al. (US 6,143,083).

With respect to claims 14, Yonemitsu et al. disclose a first substrate handling chamber 100, 500, front docking port 13, 200, robot arm 66, 20, and a buffer station having a rack 40. Yonemitsu et al. further discloses different relative pitches between a front opening unified pod and a buffer station rack. C12/L22-28; C6/L63-C7/L65. It is noted that claim 14 does not recite a load lock chamber much less a load lock chamber separate from a buffer station. Yonemitsu et al. certainly disclose a load lock that can function as a buffer station. C4/L12.

With respect to claim 19, Yonemitsu et al. disclose a substrate handling chamber at standard atmosphere pressure. Col. 7, Ins. 21-22.

With respect to claim 20, Yonemitsu et al. discloses a substrate handling chamber at reduced pressure.

With respect to claim 21, Yonemitsu et al. disclose a buffer station rack with reduced relative spacing between rack slots. C12/L22-28; C6/L63-C7/L65.

With respect to claim 22, Yonemitsu et al. disclose a buffer station rack at reduced pitch rack, accessed by robot arm. C12/L22-28; C6/L63-C7/L65.

With respect to claim 23, Yonemitsu et al. disclose a robot arm end effectors for transferring substrates. FIGS. 7-8B.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 10-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsunaga et al. (2003/0053893) in view of Ozawa et al. (US' 5,810,538).

With respect to claims 10 & 14, Matsunaga et al. discloses a first substrate handling chamber 12, front docking port 50, robot arm 10, rear substrate handling chamber 41, buffer station 101 having a rack (Para. [0065]), and does not disclose a buffer station rack having a reduced pitch relative to FOUP shelves. Ozawa et al. discloses a reduced pitch between a rack 18 and FOUP rack (C4/L45-53) allows multiple wafers from smaller cassettes to be placed in a single wafer boat allowing increase wafer production during one boat cycle-through. C2/L45-65. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Matsunaga et al. to include a buffer station rack having a reduced pitch relative to FOUP shelves, as per the teachings of Ozawa et al., to reduce boat cycle-through times.

With respect to claim 11, Matsunaga et al. does not disclose a robot arm configured to employ a variable pitch end effector. Ozawa et al. discloses a variable pitch end effector (C4/L45-53) that allows multiple wafers from smaller cassettes to be placed in a single wafer boat allowing increase wafer production during one boat cycle-through. C2/L45-65. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of Matsunaga et

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al. to include a variable pitch end effector, as per the teachings of Ozawa et al., to reduce boat cycle-through times.

With respect to claims 12-13, Matsunaga et al. disclose a first substrate handling chamber 12 configured to operate at atmospheric pressure and at a reduced pressure.

With respect to claim 15, Matsunaga et al. disclose a loadlock chamber 21, 31 having a loadlock rack (Para. [0022], L3-4).

With respect to claim 16, Matsunaga et al. disclose a rear substrate handling chamber 41.

With respect to claim 17, Matsunaga et al. disclose a loadlock capacity of 1 to 7 substrates.

With respect to claim 18, Matsunaga et al. disclose a rack 106 configured to support a plurality of 300mm silicon wafers.

Response to Arguments

Applicant's arguments/amendments with respect to claims 1-13 & 15-18 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 14 have been fully considered but they are not persuasive. It is noted that claim 14 does not positively recite a load lock chamber much less a load lock chamber separate from a buffer station. Yonemitsu et al. certainly disclose both a buffer station and a load lock. C4/L12.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory W. Adams whose telephone number is (571) 272-8101. The examiner can normally be reached on M-Th., 8:00-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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